



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

DIVISION OF  
CORPORATION FINANCE

Mail Stop 4546

August 25, 2016

Dr. Rodger Novak  
Chief Executive Officer  
CRISPR Therapeutics, Inc.  
200 Sidney St.  
Cambridge, MA 02139

**Re: CRISPR Therapeutics AG  
Amendment No. 4 to Draft Registration Statement on Form S-1  
Submitted August 12, 2016  
CIK No. 0001674416**

Dear Dr. Novak:

We have reviewed your amended draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Notes to Consolidated Financial Statements

Note 7. Convertible Loans

2015 Convertible Loan Agreement with Vertex and certain existing shareholders, page F-20

1. We acknowledge your response to our prior comment one. Regarding your analyses under mandatory conversion in the case of a qualified offering and a conversion into common shares at the price paid by investors in the IPO, tell us:
  - The authoritative literature supporting your statement that “this feature was not considered a conversion option because the value the holders would receive upon conversion does not vary based on the value of the underlying equity at the time of conversion, rather, they would receive a variable number of shares with an aggregate fair value equal to the debt principal outstanding.”

- What you mean by your statement “that this feature was ultimately evaluated by the Company as a redemption feature” and the authoritative literature supporting this statement.
- The basis for your conclusion that the holders “would receive a variable number of shares with an aggregate fair value equal to the debt principal outstanding” as, based on your disclosure, the holders appeared to receive shares with a fair value less than the debt principal outstanding.
- How the Bayer Loan conversion price of \$13.43 per share was determined since that is the price used to determine the number of shares into which the Vertex loan is converted.

Note 9. Significant Contracts

Joint Venture with Bayer Healthcare LLC, page F-28

2. We acknowledge your response to our prior comment two. Please tell us why you chose to value the license based on the total of the fair value of your 50% interest in the joint venture and the \$35 million in cash payments from Casebia. In this regard, tell us why you went through a process of determining the fair value of Casebia, presumably after completion of its formation and receipt of contributions/commitments by Bayer and you including the license, and why you did not perform a separate valuation of the license. Confirm that the fair value of Casebia for which you based your 50% interest excludes the \$35 million in cash payments to be made to you by Casebia. Also, tell us why the total of your 50% interest in the joint venture and the \$35 million in cash payments would be representative of fair value of the license considering that they were received as part of a multiple element arrangement.
3. Please provide us an analysis with reference to authoritative literature to support your accounting whereby you intend to recognize the gain on sale of license upon the delivery of the patent holders’ consent.

You may contact Christine Torney at (202) 551-3652 or James Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Michael Gershon at (202) 551-6598 or Mary Beth Breslin at (202) 551-3625 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes  
Assistant Director  
Office of Healthcare and Insurance

cc: Robert E. Puopolo, Esq.